

What is claimed is:

1. A method for preparing bisphenol A, comprising the following steps:

transferring phenol and acetone into a reaction zone charged with condensation catalyst, obtaining a stream containing bisphenol A after reaction;

transferring the obtained stream containing bisphenol A into a rectification zone, obtaining a product fraction primarily containing bisphenol A and phenol; and

transferring the product fraction primarily containing bisphenol A and phenol into a crystallization zone to obtain a bisphenol A product;

characterized in that a water-depleted fraction primarily containing phenol, bisphenol A and acetone is obtained from the rectification zone, and said water-depleted fraction is cooled and returned as a cycled stream to the reaction zone.

2. The method according to claim 1, characterized in that the water content in the water-depleted fraction, which is returned to the reaction zone and primarily contains phenol, bisphenol A and acetone, is controlled at a level of not greater than 2% by weight.
3. The method according to claim 1, characterized in that said reaction zone is an adiabatic fixed bed reactor comprising one adiabatic fixed bed reactor or two or more adiabatic fixed bed reactors arranged in series.
4. The method according to claim 3, characterized in that when said reaction zone comprises two or more adiabatic fixed bed reactors arranged in series, the water-depleted fraction primarily containing phenol, bisphenol A and acetone is returned to any one of the reactors or to each reactor

proportionally.

5. The method according to claim 4, characterized in that when said reaction zone comprises two or more adiabatic fixed bed reactors arranged in series, the water-depleted fraction primarily containing phenol, bisphenol A and acetone is returned to the last reactor only.
6. The method according to claim 4, characterized in that the weight ratio of the cycled flow rate of said water-depleted fraction primarily containing phenol, bisphenol A and acetone to the flow rate of the feed stream to the reactor, into which said water-depleted fraction enters, is in the range from 5:1 to 15:1.
7. The method according to claim 5, characterized in that the weight ratio of the cycled flow rate of said water-depleted fraction primarily containing phenol, bisphenol A and acetone to the flow rate of the feed stream to the reactor, into which said water-depleted fraction enters, is in the range from 5:1 to 15:1.
8. The method according to claim 1, characterized in that said rectification zone is a rectification column, the water-depleted fraction primarily containing phenol, bisphenol A and acetone is a side draw of said rectification column, and a product fraction primarily containing bisphenol A and phenol is discharged from the bottom of said rectification column.
9. The method according to claim 8, characterized in that the operation pressure of said rectification column is in the range of 50-800mmHg (absolute pressure).
10. The method according to claim 2, characterized in that said rectification zone is a rectification column, the water-depleted fraction primarily

containing phenol, bisphenol A and acetone is a side draw of said rectification column, and a product fraction primarily containing bisphenol A and phenol is discharged from the bottom of said rectification column.

11. The method according to claim 5, characterized in that said rectification zone is a rectification column, the water-depleted fraction primarily containing phenol, bisphenol A and acetone is a side draw of said rectification column, and a product fraction primarily containing bisphenol A and phenol is discharged from the bottom of said rectification column.

12. The method according to claim 1, characterized in that said rectification zone is composed of a flash drum and a rectification column, the bisphenol A-containing stream from the reaction zone is transferred into the flash drum, a water-depleted fraction primarily containing phenol, bisphenol A and acetone is discharged from the bottom of the flash drum, part of said water-depleted fraction is cycled back to the reaction zone, the residual part is transferred into the rectification column, and a product fraction primarily containing bisphenol A and phenol is discharged from the bottom of said rectification column.

13. The method according to claim 12, characterized in that the operation pressure of said flash drum in the rectification zone is in the range of 50-800mmHg (absolute pressure).

14. The method according to claim 2, characterized in that said rectification zone is composed of a flash drum and a rectification column, the bisphenol A-containing stream from the reaction zone is transferred into the flash drum, a water-depleted fraction primarily containing phenol, bisphenol A and acetone is discharged from the bottom of the flash drum,

part of said water-depleted fraction is cycled back to the reaction zone, the residual part is transferred into the rectification column, and a product fraction primarily containing bisphenol A and phenol is discharged from the bottom of said rectification column.

15. The method according to claim 5, characterized in that said rectification zone is composed of a flash drum and a rectification column, the bisphenol A-containing stream from the reaction zone is transferred into the flash drum, a water-depleted fraction primarily containing phenol, bisphenol A and acetone is discharged from the bottom of the flash drum, part of said water-depleted fraction is cycled back to the reaction zone, the residual part is transferred into the rectification column, and a product fraction primarily containing bisphenol A and phenol is discharged from the bottom of said rectification column.

16. The method according to claim 1, characterized in that the molar ratio of phenol to acetone in said reaction zone is in the range from 3:1 to 30:1, the condensation temperature in said reaction zone is in the range of 50-130°C, and the condensation pressure is from atmosphere to 6kg/cm² (gage pressure).

17. The method according to claim 2, characterized in that the molar ratio of phenol to acetone in said reaction zone is in the range from 3:1 to 30:1, the condensation temperature in said reaction zone is in the range of 50-130°C, and the condensation pressure is from atmosphere to 6kg/cm² (gage pressure).

18. The method according to claim 5, characterized in that the molar ratio of phenol to acetone in said reaction zone is in the range from 3:1 to 30:1, the condensation temperature in said reaction zone is in the range of 50-130°C, and the condensation pressure is from atmosphere to 6kg/cm²

(gage pressure).

19. The method according to claim 1, characterized in that in the crystallization zone the crystallization is carried out once only.
20. The method according to claim 5, characterized in that in the crystallization zone the crystallization is carried out once only.